WHAT IS CLAIMED IS:

1. A method for detecting a biopolymer in a matrix, comprising:

(a) contacting the matrix with a sensitizing reagent comprising one or more optionally substituted heteroaromatic compounds;

(b) contacting the matrix with one or more reduceable metal salts to stain said biopolymer; and

(c) detecting the stained biopolymer.

2. The method of claim 1, wherein said matrix is a polyacrylamide gel, agarose, paper, cellulose acetate, or nitrocellulose.

3. The method of claim 1, wherein said biopolymer is fixed to the matrix by treatment of the matrix with a fixing reagent comprising an aqueous solution of an organic acid and a lower alcohol containing 1-4 carbon atoms.

4. The method of claim 3, wherein said lower alcohol is methanol, ethanol, propanol, or isopropanol.

5. The method of claim 3, wherein said organic acid is acetic acid, citric acid, sulfosalicylic acid or trichloroacetic acid.

6. The method of claim 3, wherein said fixing reagent consists of about 40% ethanol, about 10% acetic acid and about 50% distilled water by volume.

7. The method of claim 1, wherein said substituted heteroaromatic compound is substituted with a group which imparts water solubility.

8. The method of claim 1, wherein said optionally substituted heteroaromatic compound is primuline, thioflavin S or 2-(4-aminophenyl)-6-methyl-7-sulfobenzothiazole.

9. The method of claim 1, further comprising contacting said matrix with said sensitizing reagent together with one or more contrast enhancing agents and one or more buffers.

10. The method of claim 9, wherein said contrast enhancing agents are selected from the group consisting of sodium sulfide, thiourea, dithiothreitol, potassium tetrathionate, sodium dithionite, and the sodium or potassium salt of thiosulfate.

11. The method of claim 9, wherein said one or more buffers has a pKa of 5-10.

12. The method of claim 9, wherein said one or more buffers is aqueous morpholinoethanesulfonic acid.

13. The method of claim 1, wherein said one or more reduceable metal salts is silver nitrate.

14. The method of claim 1, wherein said stained biopolymer is developed prior to said detecting by contacting the matrix with one or more reducing agents.

15. The method of claim 14, wherein said one or more reducing agents is formaldehyde.

16. The method of claim 1, wherein said stained biopolymer is detected visually.

17. The method of claim 1, wherein said stained biopolymer is detected by scanning the image with an electronic scanner.

18. The method of claim 1, wherein said stained biopolymer is detected with an imaging camera.

19. The method of claim 1, wherein said matrix is heated when contacted with at least one of the sensitizing reagent and the one or more reduceable metal salts.

20. The method of claim 19, wherein said heating is carried out with microwave energy.

21. The method of claim 1, wherein said biopolymer is a protein.

22. The method of claim 1, wherein said biopolymer is a peptide.

23. The method of claim 1, wherein said biopolymer is a nucleic acid molecule.

24. A method for detecting a protein/peptide or nucleic acid molecule in a polyacrylamide gel, comprising:

(a) fixing the protein/peptide or nucleic acid molecule to the polyacrylamide gel;

(b) contacting the polyacrylamide gel with a sensitizing reagent comprising primuline, thioflavin S or 2-(4-aminophenyl)-6-methyl-7-sulfobenzothiazole;

(c) contacting the polyacrylamide gel with an aqueous solution of a silver salt to stain the protein/peptide or nucleic acid molecule,

(d) developing the stained protein/peptide or nucleic acid molecule, and

(e) detecting the stained protein/peptide or nucleic acid molecule.

25. The method of claim 24, wherein said protein/peptide or nucleic acid molecule is fixed to the polyacrylamide gel by contacting the polyacrylamide gel with a fixing reagent consisting of about 40% ethanol, about 10% acetic acid and about 50% distilled water by volume.

26. The method of claim 24, wherein said sensitizing agent further comprises aqueous morpholinoethanesulfonic acid and one or more contrast enhancing agents selected from the group consisting of sodium sulfide, thiourea, dithiothreitol, potassium tetrathionate, sodium dithionite, and the sodium or potassium salt of thiosulfate.

27. The method of claim 24, wherein said stained protein/peptide or nucleic acid molecule is developed by contacting the polyacrylamide gel with aqueous formaldehyde.

28. A method for identifying a protein or peptide in a matrix, comprising:

(a) contacting the matrix with a sensitizing reagent comprising one or more optionally substituted heteroaromatic compounds;

(b) contacting the matrix with one or more reduceable metal salts to stain said protein or peptide;

(c) detecting the stained protein or peptide;

(d) carrying out a cleavage reaction on the protein or peptide to give fragments; and

(e) carrying out a mass spectrometric analysis on said fragments thereby identifying the protein or peptide.

29. A kit for the detection of biopolymers, comprising one or more components selected from the group consisting of:

(a) a sensitizing reagent comprising one or more optionally substituted heteroaromatic compounds;

(b) one or more reduceable metal salts;

(c) one or more developer solutions comprising a reducing agent;

(d) one or more stopper solutions which prevent further reduction of the reduceable metal salts;

(e) one or more contrast enhancing agents;

(f) one or more buffers;

(g) one or more fixing reagents;

(h) one or more cleaving reagents;

(i) one or more biopolymers

(j) one or more matrixes; and

(k) one or more indicators which are sensitive to pH changes.

30. A composition, comprising one or more components selected from the group consisting of:

(a) a sensitizing reagent comprising one or more optionally substituted heteroaromatic compounds;

(b) one or more reduceable metal salts;

(c) one or more developer solutions comprising a reducing agent;

(d) one or more stopper solutions which prevent further reduction of the reduceable metal salts;

(e) one or more contrast enhancing agents;

(f) one or more buffers;

(g) one or more fixing reagents;

(h) one or more cleaving reagents;

(i) one or more biopolymers;

(j) one or more matrixes; and

(k) one or more indicators which are sensitive to pH changes.

31. The composition of claim 30, wherein said one or more indicators is phenolphthalein or thymolphthalein.

32. The composition of claim 30, wherein said one or more fixing reagents comprises an aqueous solution of an organic acid and a lower alcohol containing 1-4 carbon atoms.

33. The composition of claim 32, wherein said lower alcohol is methanol, ethanol, propanol, or isopropanol.

34. The composition of claim 32, wherein said organic acid is acetic acid, citric acid, sulfosalicylic acid or trichloroacetic acid.

35. The composition of claim 30, wherein said one or more fixing reagents consists of about 40% ethanol, about 10% acetic acid and about 50% distilled water by volume.

36. The composition of claim 30, wherein said optionally substituted heteroaromatic compound is primuline, thioflavin S or 2-(4-aminophenyl)-6-methyl-7-sulfobenzothiazole.

37. The composition of claim 30, wherein said one or more contrast enhancing agents are selected from the group consisting of sodium sulfide, thiourea, dithiothreitol, potassium tetrathionate, sodium dithionite, and the sodium or potassium salt of thiosulfate.

38. The composition of claim 30, wherein said one or more buffers has a pKa of 5-10.

39. The composition of claim 30, wherein said one or more buffers is morpholinoethanesulfonic acid, 4-(2-hydroxyethyl)-1-piperazinepropane-sulfonic acid (EPPS), or 4-(2-hydroxy-ethyl)-1-piperazineethanesulfonic acid (HEPES).

40. The composition of claim 30, wherein said one or more reducible metal salts is silver nitrate.